

FACTORS RELATING TO CHILDREN'S LEADERSHIP  
SELECTIONS WITHIN THEIR OWN GROUPS

by

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## INTRODUCTION

### Origin of the Problem

The problem for this thesis originated in a small study connected with a Mental Hygiene course at Kansas State College. While this study was not concerned directly with the problem of leadership, it was concerned with sociometric status,<sup>1</sup> which is also the point of departure for the research done for this thesis, since, in this report leadership is defined as the highest score on a sociometric test. In that earlier study an attempt was made to correlate sociometric status with certain self-ratings used in connection with the Freshman Orientation Program at Kansas State College. The subjects were 56 girls who constituted a 100 percent sample of the dormitory population. Correlations were run on 21 out of 28 traits, and only two, submissive (positive) and impetuous (negative), turned out to be significant. This provided the idea of investigating personality traits that are significant for leadership, sociometrically defined. However, examination of the literature in this field revealed that more work had been done with high school students, college students and adults, than with preschool and elementary school children, as shown by Stogdill,<sup>2</sup> who in a comprehensive review of the liter-

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<sup>1</sup>A subject's sociometric status is a measure of social acceptance in his group, as determined by the number of votes he gets on a sociometric test when subjects in the group are asked to make choices of partners for specific situations, e.g. sit next to for class.

<sup>2</sup>R. M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature", J. of Psychol. 25:35, January 1948.

ature over a forty year period, found only 3 studies of preschool groups, 17 using grade school groups, 34 of high school groups, 26 using college students, and 32 using adults not in school. Hence, 4th, 5th, and 6th graders were selected as the subjects for this study.

### Review of Previous Studies

Studies of leadership may be grouped into six categories according to the method which determined the definition of leadership: (1) Sociometric, i.e. studies where the definition of leadership is based on a popularity questionnaire, dealing with choice of partners for specified activities, (2) Office holding, i.e. studies where persons holding elective offices, e.g. club presidents in high school were designated as leaders, (3) Teachers' ratings in which students were designated as leaders on the basis of judgements made by teachers, as to popularity and other characteristics thought to be important for leadership, (4) Trained groups in which subjects were given training in a certain skill, e.g. leading a discussion, and personality characteristics of those so trained and those not trained were compared, (5) Behavioral, i.e. studies where the spontaneous emergence of a person to do a certain job was watched for, and (6) Questionnaire and Testing, in which subjects were given tests and questionnaires made up of items considered important for leaders, which were then factor analysed.

Sociometric Studies. These have been done at all ages from

preschool to adulthood. On the preschool level, Hilbert,<sup>3</sup> in a local study using 16 subjects, found that leaders received and initiated more friendly contacts. Gregory, in a study reported by Northway,<sup>4</sup> observing 14 four year olds during ten-minute observation periods, noted that leaders talked more, contributed more to block construction, took the initiative more often, and attempted to control the situation more often. Lippitt,<sup>5</sup> discovered that leaders among 45 subjects showed more social participation, more direction of and by others, were more inclined to compliance with others, and manifested more hostile behavior. Hunt,<sup>6</sup> using 23 subjects, aged 5-4 to 8-10, reported that leaders in a summer camp were better at athletics, and less egocentric as measured by counselors' ratings.

On the elementary school level, the most important studies have been done by Bonney.<sup>7,15</sup> He discovered that in the 4th grade leaders were socially overt, tidy, happy, and at ease with adults.<sup>7</sup>

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- 3/H. Hilbert, Friendly Relationships in a Selected Group of Nursery School Children. Unpublished Masters Thesis, Kansas State College, Manhattan, Kansas, 1944.
  - 4/M. L. Northway, "Social Relationships among Preschool Children", Sociometry 6:429, November 1943.
  - 5/Rosemary Lippitt, "Popularity among Preschool Children", Child Develon. 12:305, December 1941.
  - 6/J. McVicar Hunt, "The Stability of some Correlates of Group Status in a Summer Camp" Am. J. Psychol. 55:33, January 1942.
  - 7/M. E. Bonney, "Personality Traits among Socially successful and Socially Unsuccessful Children." J. Educ. Psychol. 34:449, November 1943.

These traits were more pronounced for girls.<sup>8</sup> In addition, the boys were rated as friendly, and showed spontaneous leadership qualities.<sup>9</sup> He also observed that in the 2nd grade more girls were chosen as leaders.<sup>10</sup> Other factors found to be important by Bonney were: having a cheerful disposition, being self-confident, and attractive,<sup>11</sup> and coming from a medium-sized family, i.e. of two to three children.<sup>12,14</sup> Intelligence and academic achievement were not significantly related to leadership.<sup>15</sup> Hardy<sup>16</sup> found that leaders among 409 3rd, 4th, 5th, and 6th graders rated high in industriousness, good conduct, work attitudes, cooperation, general adjustment, and social traits. Potashin<sup>17</sup> observed that leaders among 124 5th, 6th, and 7th graders were more often more cheerful, and had a better sense of humor.

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- 8/Idem, "Sex Differences in Social Success and Personality Traits," Child Develop. 15:63, March 1944.
  - 9/Idem, Loc. cit. (November 1943)
  - 10/Idem, "Sex Differences in Social Success and Personality Traits," J. Genet. Psychol. 60:271, June 1942.
  - 11/Idem, Loc. cit. (June 1942)
  - 12/Idem, Loc. Cit. (June 1942)
  - 13/Idem, "A Sociometric Study of some Factors of Mutual Friendship on the Elementary, Secondary, and College Level," Sociometry 9:21, February 1946.
  - 14/Idem, "Relationships between Social Success, Family Size, Socioeconomic Home Background, and Intelligence among School Children in Grades III-V," Sociometry 7:26, February 1944.
  - 15/Idem, "A Study of Intelligence, Family Size and Sex Differences with Mutual Friendships in the Primary Grades," Child Develop. 13:79, June 1942.
  - 16/M. C. Hardy, "Social Recognition at the Elementary School Age," J. Soc. Psychol. 8:365, August 1944.
  - 17/R. Potashin, "A Sociometric Study of Children's Friendships," Sociometry 9:48, February 1946.



Non-leaders embarrassed each other more often, were dull and bored. Young,<sup>18</sup> using 100 6th, 7th, and 8th graders, found leaders to be high in extraversion; social standards and skills; in family, school, and community relations; emotional stability; freedom from nervous symptoms; sense of personal worth; personal freedom and self-reliance, as measured by the California Test of Personality and the Aspects of Personality Test. Kuhlen,<sup>19</sup> using 700 6th, 9th, and 12th graders, discovered leaders to be friendly, enthusiastic, and cheerful. Non-leaders were acting older than their age, seeking attention, and being talkative.

On the high school level, Jennings,<sup>20</sup> in her pioneer study using 133 subjects aged 12 to 16, observed that leaders did things for others, furthered social participation by others, took the initiative and attempted to control the situation more often, and showed more planning and organization. Partridge<sup>21</sup> noted that leaders among 27 adolescents scored higher on the Army Alpha Test and tended to be slightly older.

On the college level, Barker<sup>22</sup> used 12 subjects and found that leaders were good-looking, showed spontaneous leadership, daring, enthusiasm, and humor. Among 200 men in a C.C.C. camp

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<sup>18</sup>/L. L. Young, "Some Factors Associated with Popularity," J. Educ. Psychol. 35:513, December 1944.

<sup>19</sup>/R. Kuhlen "Personality Characteristics and Social Acceptability in Adolescence," J. Educ. Psychol. 24:321, September 1943.

<sup>20</sup>/H. H. Jennings, "Leadership and Sociometric Choice," Sociometry 10:32, February 1947.

<sup>21</sup>/E. De Alton Partridge, "Ability in Leadership among Adolescent Boys," School Rev. 40:526, September 1932.

<sup>22</sup>/R. G. Barker, "Social Interrelations of Strangers and Acquaintances," Sociometry 5:169, May 1942

Murphy<sup>23</sup> observed that leaders showed helpfulness, faithfulness, pleasantness, and understanding of other people's problems. Non-leaders showed smartness, bullying, and big shot attitudes.

Office Holding. Studies using this criterion have been done with high school students, college students, and non-college adults. On the high school level, Flemming,<sup>24</sup> studying 71 high school girls, noted that leaders, were fair, original, lively, and had pleasant voices. Remmlein,<sup>25</sup> working with 783 high school seniors, found that leaders were high in intelligence and scholarship, and higher in socioeconomic status; this was less true for the boys. Boy leaders also showed a neurotic tendency and dominance as measured by the Bernreuter scales. Girl leaders also tended to be younger. Wetzel<sup>26</sup> noted that leaders among 56 high school students had more respect for rules, self control, initiative, intellectual curiosity, independence, interest in order and beauty, courtesy, sportsmanship, and physical vigor than non-leaders. They were also rated as cooperative, responsible, industrious, and thorough.

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<sup>23</sup>A. J. Murphy, "A Study of the Leadership Process," Am. Sociol. Rev. 6:674, October 1941.

<sup>24</sup>E. G. Flemming, "A Factor Analysis of the Personality of High School Leaders," J. Appl. Psychol. 19:596, June 1935.

<sup>25</sup>M. K. Remmlein, "Analysis of Leaders among High School Seniors," J. Exp. Educ. 6:413, June 1938.

<sup>26</sup>W. A. Wetzel, "Characteristics of Pupil Leaders," School Rev. 40:532, September 1932.



Reynolds,<sup>27</sup> using 888 high school seniors, observed that leaders made higher scores on an all round promise rating, and tended to be higher in intelligence and school achievement. But the correlations were all low. Garrison<sup>28</sup> found that leaders among 201 high school students made high scores on a popularity test, and tended to be slightly higher in scholarship and slightly younger.

On the college level, Hanawalt,<sup>29,30</sup> in two studies employing 76 subjects, noted that on the Bernreuter scales leaders scored higher on dominance and extaversion regardless of sex, and showed better emotional balance. Self-confidence was important only for women. Leaders among 40 college women were judged to have a higher level of aspiration, defined as the number of letters they said they were going to cross out after knowing their previous scores.<sup>31</sup> Middleton<sup>32</sup> observed, that among 30 subjects, leaders were high in character, intelligence, persistence, accuracy,

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- 27/F. J. Reynolds, "Factors of Leadership among Seniors at Central High School, Tulsa, Okla." J. Educ. Res. 37:356, January 1944.  
 28/K. C. Garrison, "A Study of some Factors Related to Leadership in High School," Peabody J. of Educ. 11:17, 1933.  
 29/N. G. Hanawalt, "Leadership as Related to the Bernreuter Personality Measures: I College Leadership in Extracurricular Activities," J. Soc. Psychol. 17:237, May 1943.  
 30/Idem, "Leadership as Related to the Bernreuter Personality Measures: II An Item Analysis of Responses of College Leaders and Non-leaders," J. Soc. Psychol. 17:251, May 1943.  
 31/Idem, "Level of Aspiration of College Leaders and Non-leaders," J. abn. soc. Psychol. 38:545, October 1943.  
 32/W. C. Middleton, "Personality Qualities Predominant in Campus Leaders," J. Soc. Psychol.

sociality, and judgement, and low in radicalness, modesty, emotionality, extraversion, decisiveness, and adaptability, as measured by the North Carolina Scale of Fundamental Traits. Sword<sup>33</sup> had 125 subjects, and noted that leaders were higher in socio-economic status, scholarship, and aptitude. Cowley<sup>34</sup> studying 112 criminal leaders, army officers, and student leaders, found that leaders were superior in speed of decision as measured by the Aggressive Mottoes Questionnaire and the Tact Mottoes Test; in motor impulsion as measured by the Downey Motor Impulsion Test; in finality of judgement as measured by the Moore-Rice Questionnaire; and in self-confidence as measured by a rating scale.

Teachers' Ratings. These have been done with grade school, high school, and college subjects. On the elementary school level, McFarlane<sup>35</sup> observed, that leaders among 376 1st, 2nd, and 3rd grade children, smiled frequently, were not quarrelsome, scared, or bossy. Zillig<sup>36</sup> in a German study, noted that leaders had a combination of good grades, pleasant appearance, high intelligence, and friendliness. None of the traits were significant by themselves.

On the high school level, Reels<sup>37</sup> observed that leaders among

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- 33/K. Sword, "Temperament and Direction of Achievement," J. Soc. Psychol. 13:199, February 1941.  
 34/W. H. Cowley, "The Traits of Face to Face Leaders," J. abn. soc. Psychol. 28:304, October 1931.  
 35/J. W. McFarlane, "Reputation Differences among Children," J. Educ. Psychol. 28:161, March 1937.  
 36/M. Zillig, "Popular and Unpopular Grammar School Girls," Ber. Kong. dtsh. Ges. Psychol. Leipzig 13:190, 1934.  
 37/W. H. Reels, "Leadership in High School," School Rev. 46:523, September 1938.

74 subjects had good attendance records, had had broadening experiences, were leaders in extracurricular activities, and were only children. Smith,<sup>38</sup> using 40 subjects, noted that leaders spent more time in leisure time activities and participated in more activities. Fauquiez,<sup>39</sup> working with 119 male delinquents, found that leaders showed dominance, excitability, impulsiveness, boldness, and alertness. They also tended to be older, taller, heavier, lower in intelligence, and better adjusted.

On the college level, Hunter<sup>40</sup> noted that leaders were lighter, had fewer physical defects, were higher in intelligence and vocabulary. They were also more dominant and self-sufficient, as measured by the Bernreuter scales, had more liberal and definite opinions, and were more mature in their interests as measured by Strong's Vocational Interest Blank. Page<sup>41</sup> observed that leaders among West Point Cadets had better bearing and appearance, and were better at tactics and athletics.

Trained Groups. These have been confined to high school and college groups. Reavis<sup>42</sup> found that student leaders among 500 high school subjects, got more cooperation from students, increased

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38/M. Smith, "A Study of Social Participation and of Leisure Time of Leaders and Non-leaders," J. Appl. Psychol. 21:251, June 1937.

39/W. Fauquiez, "Some Aspects of Leadership in an Institution," Child Develop. 13:55, March 1942.

40/E. C. Hunter, "An Analysis of Qualities Associated with Leadership among College Students", J. Educ. Psychol. 30:497, October 1939.

41/D. P. Page, "Measurement and Prediction of Leadership," Am. J. Sociol. 41:31, July 1935.

42/C. Reavis, "An Experiment in Pupil Leadership," Ed. Vic. 3:No 21: 11, May 3, 1945.

work output, and cut down on the amount of disciplining.

Eichler<sup>43</sup> observed that leaders among 213 9th, 11th, and 12th graders were high in individuality, vitality, social adaptability, self-control, persistence, and scholarship. They also had higher scores on the Allport Test of Ascendancy, the Renman-Nelson Form A, and the Moss Social Intelligence Test, and were taller. Zeleny<sup>44</sup> observed that college discussion leaders were more self-confident, and had more participation and prestige.

Behavioral. These have been done with junior high school student and non-college adults. Zillig,<sup>45</sup> using junior high school students, classified leaders into four types: (1) Organizer, (2) Master, who rules by right of higher intellect, (3) Despot, who rules by right of might, (4) Stimulator. Four classes of followers were also isolated: (1) Those with the same interests as the leader, who find fulfillment of their own ends in contact with the leader, (2) Helpless, i.e. those without specific aims or 'knowhow', (3) Those who were shy or non-assertive, and (4) The fearful. Among soldiers in the Australian Army, Gibb<sup>46</sup> observed

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<sup>43</sup>G. Eichler, "Studies in Student Leadership," Penn State Studies in Education No. 10, 1934.

<sup>44</sup>L. D. Zeleny, "Characteristics of Group Leaders," Sociol. Soc. Res. 24:140, 1939.

<sup>45</sup>M. V. Zillig, "Communal Living, Group Training, Leadership, and Followership in the School Room," Industr. Psychotech. 13:201, 1936.

<sup>46</sup>C. A. Gibb, "The Principles and Traits of Leadership," J. abn Soc. Psychol. 42:267, July 1947.

that leaders were higher in intelligence and other mental measurements, were older, of higher socioeconomic status, self-confident, aggressive and adjustable. Speech, appearance, emotional maturity, and length of service had no relation to leadership.

Questionnaire and Testing. These have been confined to college students and adults not in school. Moore<sup>47</sup> noted that college leaders showed friendliness, sympathy, dignity, fairness, and initiative. Coffin<sup>48</sup> observed that leaders among 156 college students showed planning, organization, and persuasion. Hara,<sup>49</sup> working with Japanese subjects, noted that the preferred leader should have good athletic ability, sense of responsibility, sympathy, kindness, and ability to guide. He was also supposed to be high in mental culture, should have had training in business and military drill, if male and in domestic sciences, if female, and should be between the ages of 20-45, depending on the sex of the respondent.

The main findings of this survey of the literature as they relate to this study are summarized in Table 1. Only half of the traits mentioned appear more than three times, and only three traits are mentioned more than twice for any one of the rough

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<sup>47</sup>/L. H. Moore, "Leadership Traits of College Women," Sociol. Soc. Res. 17:44, 1932.

<sup>48</sup>/T. E. Coffin, "A Three Component Theory of Leadership," J. Abn. Psychol. 39:63, January 1944.

<sup>49</sup>/K. Hara, "Psychological Studies of Leaders of Youth: II An Ideal Leader Preferred by Young Men and Women," Jan. J. Exp. Psychol. 36:757, 1936.



grade groupings. This lack of agreement is probably not too surprising when it is considered that different methods were used to arrive at the findings and that the number of subjects employed in the various studies ranged from 12 to more than 800.

This brings us to a discussion of the methods used in this study. We note that of the six methods which have been used for the study of leadership, only three have been used on the elementary school level: sociometric, teachers' ratings, and behavioral. The reasons for this are not hard to find. Office holding is obviously not a suitable criterion, since children of these ages do not hold office. Use of questionnaires for defining leadership and factor analysis are not advisable procedures, since one can never be entirely positive about results obtained in this manner. Comparison of two groups, one of which has been trained in a leadership skill, while the other one has been left untrained is feasible, but it takes time, and the effects might be difficult to observe. Use of behavioral criteria poses some of the same problems of time and certainty of any definite results. Teachers' ratings are easier to set up than behavioral criteria or training situations, but still have some defects. Teachers do not always see the same things as children and do not put the same degree of importance on some traits as children do. Also, since in this study we are interested in what characteristics children want in their own leaders rather than the characteristics teachers would like to see in children's leaders, it is best to go to the children themselves. This is made possible by the sociometric method. Even preschool



children are able to make choices of partners for activities, as demonstrated by Florence Moreno,<sup>50</sup> which is essentially what the sociometric method entails.

The sociometric method developed by Jacob Moreno<sup>51</sup> and Jennings<sup>52</sup> measures popularity by asking subjects to select partners for specified activities, e.g. go home with after school. The number of choices of associates is either fixed in advance or the subjects are allowed unlimited choice. Persons receiving the largest number of choices are designated as leaders. When thus employed sociometric methods have shown coefficients of reliability ranging from 0.65 (allowing unlimited choice and a retest interval of eight months)<sup>53</sup> to 0.95 (using five choices and a retest interval of four weeks)<sup>54</sup>.

The advantages of the sociometric method may be summarized by saying that it is a direct method, that it is easy to apply, that it has a fair degree of reliability, and measures a factor, popularity, which other investigators have found to have a high

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<sup>50</sup>/Florence Moreno, "Sociometric Status of children in a Nursery School Group," Sociometry 5:395, November 1942.

<sup>51</sup>/Jacob Moreno, "Who Shall Survive?" (New York Nervous and Mental Disease Publishing Co.) 1934.

<sup>52</sup>/H. H. Jennings, Leadership and Isolation (New York: Longmans, Green & Co.) 1943.

<sup>53</sup>/Op. cit. pp. 30, 56.

<sup>54</sup>/H. H. Jennings, "Leadership and Sociometric Choice," Sociometry 10:32, February 1947.

correlation with leadership, as determined by other methods.<sup>55</sup>

This brings us to a discussion of the methods used in this study.

Table 1. Traits most frequently mentioned as important for leadership in other studies, arranged in rough age groupings.

| Trait           | : Preschool<br>:--6th grade: | :6th to :<br>12th gr: | : College : | : Adults : | : Total |
|-----------------|------------------------------|-----------------------|-------------|------------|---------|
| Friendly        | 3                            | 1                     | 2           |            | 6       |
| Sp. leader      | 2                            | 3                     | 2           |            | 7       |
| Dominant        | 2                            | 1                     | 2           |            | 5       |
| Confident       | 1                            | 1                     | 4           | 1          | 7       |
| Cooperative     | 2                            | 2                     |             | 1          | 5       |
| Seeks attention |                              | 1                     |             | 1          | 2       |
| Popular         | 1                            |                       |             |            | 1       |
| Follower        |                              | 1                     |             |            | 1       |
| Adaptable       |                              | 1                     | 1           | 1          | 3       |
| Aggressive      |                              |                       |             | 1          | 1       |
| Submissive      | 1                            |                       |             |            | 1       |
| Bashful         | 1                            |                       |             |            | 1       |

#### SUBJECTS AND PROCEDURES

The subjects for this study were children in grades 4, 5, 6 in Manhattan and Wamego, Kansas. There were 95 subjects in the Manhattan group and 81 in the Wamego group. One hundred percent

<sup>55</sup>/R. M. Stogdill, Loc. cit.

samples were used throughout the study, that is all the children present in the room on the day of testing were included.

They were given two questionnaires.<sup>1</sup> The first was what is known as a sociometric test composed of three situations: whom they wanted to sit next to, whom they wanted to play with at recess, and whom they wanted to go home with after school. The situations were presented in the order shown above, and three choices were allowed for each criterion. The directions were read to the children by the examiner, and they recorded their selections on blank pieces of paper. The situations were selected because they were simple and within the experience of the children and could be carried out. The order in which the situations were presented was more or less arbitrary, except that it happens to be the order of events on an ordinary school day.

The second instrument was a personality questionnaire of twenty traits, each of which was operationally defined. The list of traits comprising the questionnaire was compiled from Hartshorne and May's study,<sup>2</sup> a checklist used by Kansas State College Counseling Bureau, and findings of other studies. Each subject was given one sheet on which he was asked to write down opposite each statement the name or names of students in their own grade room, whom they thought the statement described. The directions were read to the children by the examiner and also appeared on the

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1/Copies of questionnaires found in appendix.

2/H. Hartshorne and M. A. May Studies in Service and Self-Control  
(New York: Macmillan Co.) 1929, pp. 87-93.

questionnaire. If the children asked questions about any one of the statements, it was first merely read to them: if rereading did not satisfy them, brief explanations were given.

The questionnaires were given to all grades in their own rooms at the same hour of the day (first period in the afternoon) and in the same order. The sociometric test was given first with the three situations presented in the order indicated above. Then the personality questionnaire of twenty traits was given.

Table 2. Correlations (with t values) between first sociometric test (sit next to) and number of mentions on personality questionnaire, Manhattan sample.

| Trait                   | 4th grade<br>(N=30) |      | 5th grade<br>(N=31) |      | 6th grade<br>(N=34) |                   |
|-------------------------|---------------------|------|---------------------|------|---------------------|-------------------|
|                         | r                   | t    | r                   | t    | r                   | t                 |
| Ascendant               | -.10                | 0.53 | .44                 | 2.70 | -.21                | 1.22 <sup>1</sup> |
| Submissive              | .53                 | 3.29 | .37                 | 2.14 | .83                 | 8.40              |
| Cooperative             | .58                 | 3.76 | -.04                | 0.22 | .53                 | 3.55              |
| Dominant                | -.08                | 0.42 | -.13                | 0.70 | -.24                | 1.39              |
| Sp. Leader <sup>2</sup> | .50                 | 3.05 | .28                 | 1.57 | .34                 | 2.05              |
| Follower                | .16                 | 0.86 | -.03                | 0.16 | -.08                | 0.46              |
| Confident               | .37                 | 2.10 | .18                 | 0.99 | .53                 | 3.55              |
| Bashful                 | -.13                | 0.69 | -.06                | 0.32 | -.24                | 1.39              |
| Tolerant                | .28                 | 1.54 | .13                 | 0.70 | .18                 | 1.03              |
| Intolerant              | .09                 | 0.47 | -.27                | 1.51 | -.24                | 1.39              |
| Friendly                | .41                 | 2.38 | .15                 | 0.82 | .34                 | 2.05              |
| Withdrawing             | .06                 | 0.32 | .16                 | 0.87 | -.26                | 1.52              |
| Aggressive              | -.04                | 0.21 | .33                 | 1.88 | -.20                | 1.16              |
| Non-aggressive          | .20                 | 1.08 | .39                 | 2.28 | .27                 | 1.60              |
| Adaptable               | .18                 | 0.97 | .18                 | 0.99 | .50                 | 3.27              |
| Unadaptable             | -.13                | 0.69 | -.10                | 0.54 | -.08                | 0.46              |
| Popular                 | .74                 | 5.80 | .60                 | 4.04 | .74                 | 6.30              |
| Unpopular               | -.17                | 0.91 | -.38                | 2.21 | -.24                | 1.39              |
| Seeks attention         | -.06                | 0.32 | -.18                | 0.99 | -.17                | 0.98              |
| Does not seek attention | .14                 | 0.75 | .16                 | 0.87 | -.09                | 0.51              |

<sup>1</sup>/t values of 2.00 or better are significant at the 5 percent level of confidence or above.

<sup>2</sup>/Sp. Leader=Spontaneous leader, as distinct from the leader determined by sociometric definition.

Table 3. Correlations (with t values) between first sociometric test (sit next to) and number of mentions on personality questionnaire, Wanego sample.

| Trait                   | 4th grade<br>(N=25) |      | 5th grade<br>(N=26) |      | 6th grade<br>(N=30) |      |
|-------------------------|---------------------|------|---------------------|------|---------------------|------|
|                         | r                   | t    | r                   | t    | r                   | t    |
| Ascendant               | -.29                | 1.45 | .31                 | 1.61 | .05                 | 0.27 |
| Submissive              | .22                 | 1.08 | .41                 | 2.20 | .21                 | 1.13 |
| Cooperative             | .53                 | 3.00 | .26                 | 1.32 | .62                 | 4.19 |
| Dominant                | -.16                | 0.78 | .29                 | 1.48 | .18                 | 0.97 |
| Sp. Leader              | .32                 | 1.62 | .66                 | 4.31 | .34                 | 1.90 |
| Follower                | .49                 | 2.70 | -.42                | 2.24 | -.24                | 1.29 |
| Confident               | .41                 | 2.16 | .36                 | 1.88 | .59                 | 3.86 |
| Bashful                 | -.39                | 2.04 | -.43                | 2.31 | -.41                | 2.38 |
| Tolerant                | .02                 | 0.09 | .34                 | 1.77 | .57                 | 3.67 |
| Intolerant              | -.03                | 0.14 | .03                 | 0.15 | .32                 | 1.78 |
| Friendly                | .45                 | 2.42 | .19                 | 0.95 | .65                 | 4.54 |
| Withdrawing             | .10                 | 0.48 | -.33                | 1.71 | -.51                | 3.11 |
| Aggressive              | -.38                | 1.97 | .31                 | 1.61 | .06                 | 0.32 |
| Non-aggressive          | .12                 | 0.58 | .37                 | 1.93 | .41                 | 2.38 |
| Adaptable               | .45                 | 2.42 | .30                 | 1.54 | .52                 | 3.22 |
| Unadaptable             | .12                 | 0.58 | -.11                | 0.54 | -.36                | 2.04 |
| Popular                 | .32                 | 1.62 | .66                 | 4.31 | .78                 | 6.56 |
| Unpopular               | -.27                | 1.35 | -.43                | 2.31 | -.42                | 2.45 |
| Seeks attention         | -.03                | 0.14 | .11                 | 0.54 | .14                 | 0.75 |
| Does not seek attention | .07                 | 0.34 | -.10                | 0.49 | .05                 | 0.27 |



Table 4. Comparison of Wamego and Manhattan. Correlations (without  $t$  values) between first sociometric test (sit next to) and number of mentions on personality questionnaire.

| Trait                   | : 4th grade<br>: M(30)W(25) |      | : 5th grade<br>: M(31)W(26) |      | : 6th grade<br>: M(34)W(30) <sup>1</sup> |                  |
|-------------------------|-----------------------------|------|-----------------------------|------|--|------------------|
| Ascendant               | -.10                        | -.29 | .44                         | .31  | -.21                                     | .05 <sup>2</sup> |
| Submissive              | .53                         | .22  | .37                         | .41  | .83                                      | .21              |
| Cooperative             | .58                         | .53  | -.04                        | .26  | .53                                      | .62              |
| Dominant                | -.08                        | -.16 | -.13                        | .29  | -.23                                     | .18              |
| Sp. Leader              | .50                         | .32  | .28                         | .66  | .34                                      | .34              |
| Follower                | .16                         | .49  | -.03                        | -.42 | -.08                                     | -.24             |
| Confident               | .37                         | .41  | .18                         | .36  | .53                                      | .62              |
| Bashful                 | -.13                        | -.39 | -.06                        | -.43 | -.24                                     | -.41             |
| Tolerant                | .28                         | .02  | .13                         | .34  | .18                                      | .57              |
| Intolerant              | .09                         | -.03 | -.27                        | .03  | -.24                                     | .32              |
| Friendly                | .41                         | .45  | .15                         | .19  | .34                                      | .65              |
| Withdrawing             | .06                         | .10  | .16                         | -.33 | -.26                                     | -.51             |
| Aggressive              | -.04                        | -.38 | .33                         | .31  | -.20                                     | .06              |
| Non-aggressive          | .20                         | .12  | .39                         | .37  | .27                                      | .41              |
| Adaptable               | .18                         | .45  | .18                         | .30  | .50                                      | .52              |
| Unadaptable             | -.13                        | .12  | -.10                        | -.11 | -.08                                     | -.36             |
| Popular                 | .74                         | .32  | .60                         | .66  | .74                                      | .78              |
| Unpopular               | -.17                        | -.27 | -.38                        | -.43 | -.24                                     | -.42             |
| Seeks attention         | -.06                        | -.03 | -.18                        | .11  | -.17                                     | .14              |
| Does not seek attention | .14                         | .07  | .16                         | -.10 | -.09                                     | .05              |

1/M=Manhattan, W=Wamego. Numbers in parentheses refer to number of subjects in each group.

2/Correlations of the following magnitudes are necessary to obtain significance in each grade:

|                 |                 |                 |
|-----------------|-----------------|-----------------|
| 4th grade M .37 | 5th grade M .37 | 6th grade M .34 |
| W .39           | W .39           | W .36           |

Table 5. Correlations (with t values) between second sociometric test (play with at recess) and number of mentions on Personality Questionnaire. Manhattan sample.

| Trait                   | 4th grade |      | 5th grade |      | 6th grade |      |
|-------------------------|-----------|------|-----------|------|-----------|------|
|                         | (N=30)    |      | (N=31)    |      | (N=34)    |      |
|                         | r         | t    | r         | t    | r         | t    |
| Ascendant               | -.02      | 0.11 | .25       | 1.39 | -.20      | 1.16 |
| Submissive              | .39       | 2.24 | .63       | 4.36 | .78       | 7.05 |
| Cooperative             | .47       | 2.82 | .03       | 0.16 | .49       | 3.18 |
| Dominant                | -.04      | 0.21 | -.09      | 0.48 | -.20      | 1.16 |
| Sp. Leader              | .08       | 0.42 | .35       | 2.02 | .35       | 2.12 |
| Follower                | -.02      | 0.11 | .12       | 0.65 | -.15      | 0.86 |
| Confident               | .64       | 4.40 | .23       | 1.27 | .47       | 3.02 |
| Bashful                 | -.20      | 1.08 | -.12      | 0.65 | -.23      | 1.34 |
| Tolerant                | .60       | 3.96 | .11       | 0.60 | .09       | 0.51 |
| Intolerant              | -.12      | 0.64 | -.27      | 1.51 | -.22      | 1.27 |
| Friendly                | .39       | 2.24 | .28       | 1.57 | .24       | 1.39 |
| Withdrawing             | -.29      | 1.60 | .07       | 0.38 | -.23      | 1.34 |
| Aggressive              | .14       | 0.75 | .22       | 1.22 | -.18      | 1.03 |
| Non-aggressive          | .14       | 0.75 | .40       | 2.35 | .29       | 1.71 |
| Adaptable               | .02       | 0.11 | .09       | 0.48 | .50       | 3.27 |
| Unadaptable             | .00       | 0.00 | -.13      | 0.70 | -.07      | 0.40 |
| Popular                 | .24       | 1.31 | .68       | 4.98 | .68       | 5.41 |
| Unpopular               | -.03      | 0.16 | -.38      | 2.21 | -.19      | 1.10 |
| Seeks attention         | .02       | 0.11 | -.18      | 0.99 | -.13      | 0.74 |
| Does not seek attention | .27       | 1.49 | .31       | 1.76 | -.01      | 0.06 |

Table 6. Correlations (with t values) between second sociometric test (play with at recess) and number of mentions on personality Questionnaire. Wamego sample.

| Trait                    | 4th grade |      | 5th grade |      | 6th grade |      |
|--------------------------|-----------|------|-----------|------|-----------|------|
|                          | (N=25)    |      | (N=26)    |      | (N=30)    |      |
|                          | r         | t    | r         | t    | r         | t    |
| Ascendant                | -.23      | 1.13 | .26       | 1.32 | -.04      | 0.25 |
| Submissive               | .34       | 1.73 | .36       | 1.88 | .06       | 0.32 |
| Cooperative              | .25       | 1.23 | .17       | 0.85 | .40       | 2.28 |
| Dominant                 | -.13      | 0.63 | .23       | 1.16 | -.12      | 0.69 |
| Sp. Leader               | .23       | 1.13 | .37       | 1.93 | .26       | 1.42 |
| Follower                 | .25       | 1.23 | -.36      | 1.88 | -.26      | 1.42 |
| Confident                | -.04      | 0.19 | .40       | 2.14 | .43       | 2.50 |
| Bashful                  | -.24      | 1.18 | -.45      | 2.47 | -.43      | 2.50 |
| Tolerant                 | -.03      | 0.14 | .12       | 0.59 | .38       | 2.16 |
| Intolerant               | -.08      | 0.39 | -.13      | 0.64 | .23       | 1.25 |
| Friendly                 | -.07      | 0.34 | .13       | 0.64 | .47       | 2.99 |
| Withdrawing              | -.20      | 0.98 | -.27      | 1.37 | -.54      | 3.99 |
| Aggressive               | -.27      | 1.35 | .28       | 1.43 | -.06      | 0.32 |
| Non-aggressive           | .00       | 0.00 | .40       | 2.14 | .34       | 1.90 |
| Adaptable                | .43       | 2.29 | .20       | 1.01 | .34       | 1.90 |
| Unadaptable              | -.08      | 0.39 | -.18      | 0.90 | -.47      | 2.99 |
| Popular                  | .25       | 1.23 | .38       | 2.02 | .60       | 3.96 |
| Unpopular                | -.25      | 1.23 | -.55      | 3.24 | -.42      | 2.45 |
| Seeks attention          | .02       | 0.09 | -.02      | 0.10 | .07       | 0.37 |
| Does not seek attention. | .00       | 0.00 | .37       | 1.93 | .04       | 0.25 |

Table 7. Comparison of Wamego and Manhattan. Correlations (without t values) between second sociometric test (play with at recess) and number of mentions on Personality Questionnaire.

| Trait                   | 4th grade |       | 5th grade |       | 6th grade |                    |
|-------------------------|-----------|-------|-----------|-------|-----------|--------------------|
|                         | M(30)     | W(25) | M(31)     | W(26) | M(34)     | W(30) <sup>1</sup> |
| Ascendant               | -.02      | -.23  | .26       | .25   | -.20      | -.04 <sup>2</sup>  |
| Submissive              | .39       | .36   | .36       | .63   | .78       | .06                |
| Cooperative             | .47       | .25   | .17       | .03   | .49       | .40                |
| Dominant                | -.04      | -.13  | .23       | -.09  | -.20      | -.12               |
| Sp. Leader              | .08       | .23   | .35       | .37   | .35       | .26                |
| Follower                | -.02      | .25   | -.36      | .12   | -.15      | -.26               |
| Confident               | .64       | -.04  | -.40      | .23   | .47       | .43                |
| Bashful                 | -.20      | -.24  | -.45      | -.12  | -.23      | -.43               |
| Tolerant                | .60       | -.03  | .12       | .11   | .09       | .38                |
| Intolerant              | -.12      | -.08  | -.13      | -.27  | -.22      | .23                |
| Friendly                | .39       | -.07  | .13       | .28   | .24       | .47                |
| Withdrawing             | -.29      | -.20  | -.27      | .07   | -.23      | -.54               |
| Aggressive              | .14       | -.27  | .28       | .22   | -.18      | -.06               |
| Non-aggressive          | .14       | .00   | .40       | .40   | .29       | .34                |
| Adaptable               | .02       | .43   | .20       | .09   | .50       | .34                |
| Unadaptable             | .00       | -.08  | -.18      | -.13  | -.07      | -.47               |
| Popular                 | .24       | .25   | .68       | .38   | .69       | .60                |
| Unpopular               | -.03      | -.25  | -.55      | -.38  | -.19      | -.42               |
| Seeks attention         | .02       | .02   | -.02      | -.18  | -.13      | .07                |
| Does not seek attention | .27       | .00   | .31       | .37   | -.01      | .04                |

<sup>1</sup>M=Manhattan, W=Wamego. Numbers in parentheses refer to number of subjects in each group.

<sup>2</sup>Correlations of the following magnitudes are necessary to obtain significance in each grade: 4th grade M .38 W .43 5th grade M .38 W .38 6th grade M .35 W .38

Table 8. Correlations (with t values) between third sociometric test (go home with after school) and number of mentions on Personality Questionnaire. Manhattan sample.

| Trait                   | 4th grade<br>(N=30) |      | 5th grade<br>(N=31) |      | 6th grade<br>(N=34) |      |
|-------------------------|---------------------|------|---------------------|------|---------------------|------|
|                         | r                   | t    | r                   | t    | r                   | t    |
| Ascendant               | -.12                | 0.64 | .34                 | 1.94 | -.11                | 0.63 |
| Submissive              | .49                 | 2.97 | .34                 | 1.94 | .80                 | 7.56 |
| Cooperative             | .47                 | 2.82 | .05                 | 0.27 | .38                 | 2.32 |
| Dominant                | -.04                | 0.47 | .12                 | 0.65 | -.19                | 1.09 |
| Sp. Leader              | .44                 | 2.60 | .24                 | 1.33 | .33                 | 1.98 |
| Follower                | .24                 | 1.31 | .13                 | 0.70 | -.10                | 0.57 |
| Confident               | .49                 | 2.97 | .20                 | 1.10 | .39                 | 2.38 |
| Bashful                 | -.14                | 0.75 | .06                 | 0.32 | -.24                | 1.39 |
| Tolerant                | .33                 | 1.85 | .22                 | 1.22 | .20                 | 1.16 |
| Intolerant              | -.06                | 0.32 | -.09                | 0.48 | -.28                | 1.65 |
| Friendly                | .33                 | 1.85 | .03                 | 0.16 | .33                 | 1.98 |
| Withdrawing             | .05                 | 0.26 | .33                 | 1.88 | -.17                | 0.93 |
| Aggressive              | .21                 | 1.14 | .41                 | 2.43 | -.22                | 1.27 |
| Non-aggressive          | .17                 | 0.91 | .53                 | 3.38 | .16                 | 0.91 |
| Adaptable               | .25                 | 1.36 | .10                 | 0.54 | .43                 | 2.70 |
| Unadaptable             | .21                 | 1.14 | .08                 | 0.43 | -.11                | 0.63 |
| Popular                 | .64                 | 4.40 | .53                 | 3.38 | .64                 | 4.71 |
| Unpopular               | .18                 | 0.97 | -.28                | 1.57 | -.20                | 1.16 |
| Seeks attention         | .07                 | 0.37 | -.05                | 0.27 | -.18                | 1.03 |
| Does not seek attention | .32                 | 1.79 | .02                 | 0.11 | -.05                | 0.29 |



Table 9. Correlations (with t values) between third sociometric test (go home with after school) and number of mentions on Personality Questionnaire. Wamego sample.

| Trait                   | 4th grade |      | 5th grade |      | 6th grade |      |
|-------------------------|-----------|------|-----------|------|-----------|------|
|                         | (N=25)    |      | (N=26)    |      | (N=30)    |      |
|                         | r         | t    | r         | t    | r         | t    |
| Ascendant               | -.20      | 0.98 | -.03      | 0.15 | .00       | 0.00 |
| Submissive              | .09       | 0.44 | .60       | 3.67 | -.04      | 0.25 |
| Cooperative             | .25       | 1.23 | .45       | 2.47 | .00       | 0.00 |
| Dominant                | -.02      | 0.09 | .15       | 0.74 | -.12      | 0.69 |
| Sp. Leader              | -.04      | 0.19 | .58       | 3.49 | .20       | 1.08 |
| Follower                | .36       | 1.84 | -.40      | 2.14 | -.27      | 1.49 |
| Confident               | .38       | 1.97 | .05       | 0.25 | .40       | 2.28 |
| Bashful                 | -.26      | 1.29 | -.12      | 0.59 | -.15      | 0.80 |
| Tolerant                | -.11      | 0.53 | .09       | 0.44 | .24       | 1.29 |
| Intolerant              | .26       | 1.29 | .08       | 0.39 | -.07      | 0.37 |
| Friendly                | .36       | 1.84 | .19       | 0.95 | .57       | 3.67 |
| Withdrawing             | -.19      | 0.93 | -.19      | 0.95 | -.40      | 2.28 |
| Aggressive              | -.18      | 0.88 | -.10      | 0.49 | .02       | 0.11 |
| Non-aggressive          | .18       | 0.88 | .13       | 0.64 | .15       | 0.80 |
| Adaptable               | .62       | 3.80 | .14       | 0.69 | .16       | 0.86 |
| Unadaptable             | -.06      | 0.29 | -.37      | 1.93 | -.41      | 2.38 |
| Popular                 | .24       | 1.18 | .57       | 3.40 | .45       | 2.66 |
| Unpopular               | -.30      | 1.52 | -.19      | 0.95 | -.44      | 2.59 |
| Seeks attention         | .09       | 0.44 | .03       | 0.15 | -.14      | 0.75 |
| Does not seek attention | .18       | 0.88 | -.12      | 0.59 | -.14      | 0.75 |



Table 10. Comparison of Wamego and Manhattan. Correlations (without t values) between third sociometric test (go home with after school) and number of mentions on Personality Questionnaire.

| Trait                   | 4th grade |       | 5th grade |       | 6th grade |                    |
|-------------------------|-----------|-------|-----------|-------|-----------|--------------------|
|                         | M(30)     | W(25) | M(31)     | W(26) | M(34)     | W(30) <sup>1</sup> |
| Ascendant               | -.12      | -.20  | .34       | -.03  | -.11      | .00 <sup>2</sup>   |
| Submissive              | .49       | .09   | .34       | .60   | .80       | -.04               |
| Cooperative             | .47       | .25   | .05       | .45   | .38       | .00                |
| Dominant                | .09       | -.02  | .12       | .15   | -.19      | -.12               |
| Sp. Leader              | .44       | -.04  | .24       | .58   | .33       | .20                |
| Follower                | .24       | .36   | .13       | -.40  | -.10      | -.27               |
| Confident               | .49       | .38   | .20       | .05   | .39       | .40                |
| Bashful                 | -.14      | -.26  | .06       | -.12  | -.24      | -.15               |
| Tolerant                | .33       | -.11  | .22       | .09   | .20       | .22                |
| Intolerant              | -.06      | .26   | -.09      | .08   | -.28      | -.07               |
| Friendly                | .33       | .36   | .03       | .19   | .33       | .57                |
| Withdrawing             | .05       | -.19  | .33       | -.19  | -.17      | -.40               |
| Aggressive              | .21       | -.18  | .41       | -.10  | -.22      | .02                |
| Non-aggressive          | .17       | .18   | .53       | .13   | .16       | .14                |
| Adaptable               | .25       | .62   | .10       | .14   | .43       | .16                |
| Unadaptable             | .21       | -.06  | .08       | -.37  | -.11      | -.41               |
| Popular                 | .64       | .24   | .53       | .57   | .64       | .45                |
| Unpopular               | .18       | -.30  | -.28      | -.19  | -.20      | -.44               |
| Seeks attention         | .07       | .09   | -.05      | .03   | -.18      | -.14               |
| Does not seek attention | .32       | .18   | .02       | -.12  | -.05      | -.14               |

<sup>1</sup>/Manhattan, W.Wamego. Numbers in parentheses refer to number of subjects in each group.

<sup>2</sup>/Correlations of the following magnitudes are necessary to obtain significance in each grade:

4th grade M .44 W .62 5th grade M .41 W .40 6th grade M .38 W .40

## RESULTS

Product moment correlations<sup>1</sup> were run between the number of votes each student got in each of the three situations and the number of mentions he got for each of the 20 traits. The significance of the correlations was tested by Fisher's t test.<sup>2</sup> Fisher considers t values to be a better indicator of the significance of correlation obtained from small samples than standard errors.<sup>3</sup> In order for a correlation to be significant at the 5 percent level of confidence or above it must have a t value of 2.00 or better. The results of the correlations are shown in Tables 2 to 9. Tables 2 to 4 show the results of the correlations for the first situation of the sociometric test, sit-next-to, Tables 5 to 7 the results for the second situation, play-with-at-recess, and Tables 8 to 10 the results for the third situation, go-home-with-after-school.

## Results of First Situation, Manhattan Sample

The results of the first situation for the Manhattan school are shown in Table 2. In looking at the correlations obtained in Manhattan, the first thing one notes is the absence of any grade trend in the correlations. None of the correlations show any tendency to increase or decrease as one goes from the 4th to the

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1/Formula used for computation given in appendix.

2/R. A. Fisher, Statistical Methods for Research Workers (Edinburgh: Oliver and Boyd) 1936, pp. 195-196 and formula given in appendix.

3/Op. cit. pp. 196-198

6th grade. The only exception is on the trait "Adaptable", for which there is a slight suggestion of a grade trend. However, here the change from the 5th to the 6th grade is somewhat sudden. The increase in the number of significant correlations as one goes from grade to grade is not entirely smooth either, with the 4th grade showing six significant correlations, the 5th grade five, and the 6th grade seven. Most of the agreements between grades on significant traits, i.e. those with  $t$  values of 2.00 or better are between the 4th and 6th grades. Only on Popular and Submissive do all the three Manhattan grades agree that the trait is significant. Significant correlations found in the 4th and 6th grade, but not in the 5th, occur on Cooperative, Sp. Leader<sup>4</sup>, Confident, and Friendly. Significant correlations found only in the 5th grade occur on Ascendant, Non-aggressive, and Unpopular, while the 6th grade produces the only significant correlation on Adaptable.

#### Results of First Situation, Wamego Sample

The results for the first situation in Wamego appear in Table 3. In Wamego we still find about the same situation in regard to any tendency for correlations to increase or decrease smoothly as we go from lower grades to higher grades, although three traits show such a trend slightly. They are Tolerant, Non-aggressive, and Popular. We also find a somewhat smoother increase in the total number of significant correlations in each grade, there

<sup>4</sup>/Sp. Leader = Spontaneous leader as distinct from the leader determined by sociometric definition.

being six in the 4th and 5th grade and 10 in the 6th grade. Here as in Manhattan we find more agreement among significant correlations between the 4th and 6th grade than between either the 5th and 6th, or the 4th and 5th grade. Bashful is the only trait where all groups agree that the trait is significant. Significant traits found in the 4th and 6th grades, but not in the 5th are Cooperative, Confident, Friendly, and Adaptable. Traits which were significant only in the 5th and 6th grades are: Popular, Unpopular, and Sp. Leader. Significant correlations found only in the 6th grade occur on Tolerant, Non-aggressive, Withdrawing, and Unadaptable. The 5th grade produces the only significant correlation on Submissive, while the 4th and 5th grades both produce significant correlations on Follower. However, in the 4th grade this correlation is positive, while in the 5th grade it is negative.

#### First Situation, Comparison of Manhattan and Wamego

A comparison of the two schools for the first situation is presented in Table 4. In comparing the two schools we find certain differences between them. Thus, while in Manhattan all the significant agreements were between the 4th and 6th grades, except where all the groups agreed, in Wamego it was found there was some agreement between 5th and 6th grades as well. When the significant correlations are examined as to their source, i.e. whether they were obtained in the Wamego or Manhattan schools or both, the following fact emerges: on Ascendant the only significant correlation is contributed by the 5th grade in Manhattan. The

only significant correlations on Tolerant and Withdrawing are both contributed by the 6th grade in Wamego. On Non-aggressive the 5th grade of Manhattan and the 6th grade of Wamego were the sources of the two significant correlations. The two significant correlations on Follower were furnished by the 4th and 5th grades of Wamego. On Sp. Leader the three significant correlations were furnished by the 4th and 6th grades of Manhattan and the 5th grade of Wamego. All the significant correlations on Bashful came from Wamego. Significant correlations on Adaptable occurred in the 4th and 6th grades of Wamego and the 6th grade of Manhattan. The ones on Unpopular came from the two 5th grades and the 6th grade of Wamego. On Submissive all grades, except the 5th and 6th grades of Wamego report significant correlations, while on Cooperative, Confident, and Friendly all grades except the two 5th grades furnish significant correlations. All groups except the 4th grade of Wamego show significant correlations on Popular.

The above discussion may be summarized as follows: 41 out of 120 correlations were significant. The significant traits, with the number of groups reporting each shown in parentheses, are as follows: Popular (5), Cooperative (4), Sp. Leader (4), Confident (4), Friendly (4), Submissive (4), Bashful (3), Adaptable (3), Unpopular (3), Non-aggressive (2), Follower (2), Ascendant (1), Tolerant (1), Withdrawing (1). These findings indicate a certain amount of agreement on which traits are considered significant for leadership. Conversely, if adjoining grades are examined, e.g. the two 4th grades for definite disagreements, defined as differences of more than 20 correlation points the



following picture is perceived: There are no definite disagreements on Ascendant, Confident, Unadaptable, and Unpopular. Two definite disagreements, each between pairs of grades, occur on Follower, Bashful, Tolerant, Intolerant, Withdrawing, and Seeks Attention. The remaining 10 traits show one definite disagreement each. From this it is observed that, in general, the traits with the largest number of disagreements are also the ones with the fewest significant correlations. Finally, it is noted that traits showing correlations of 0.40 or better in three or more groups are: Popular, Cooperative, Confident, Submissive, and Adaptable, while traits showing no significant correlations for any group are: Dominant, Intolerant, Aggressive, Seeks Attention, and Does Not Seek Attention.

#### Results of Second Situation, Manhattan Sample

The results for the second situation in Manhattan appear in Table 5. In looking at the Manhattan correlations for the second situation we find some evidences of a grade trend. Submissive and Dominant show this in a smooth manner, while Sp. Leader, Adaptable, and Popular show it with some rather sudden increases--from the 4th to the 5th grade in the case of Sp. Leader and Popular, and from the 5th to the 6th grade in the case of Adaptable. Friendly shows a consistent decrease. There are five significant correlations each in the 4th and 5th grades, and six in the 6th grade. All the groups agree that the trait Submissive is significant. The 4th and 6th grades agree on the significance of the traits Cooperative and Confident. The 5th and 6th grades



agree on Sp. Leader and Popular. The 4th grade gives the only significant correlations on Friendly and Tolerant; the 5th grade only significant correlations on Non-aggressive and Unpopular; while the 6th grade has the only significant correlation on Adaptable.

#### Results of Second Situation, Wamego Sample

The results for the second situation in Wamego are shown in Table 6. In Wamego in the second situation we note a grade trend with some rather sharp increases from the 5th to the 6th grade. There is only one significant correlation in the 4th grade, five in the 5th grade, and nine in the 6th grade. There are no traits which show significant correlations in all grades. Significant traits found in the 5th and 6th grade include: Confident, Bashful, Popular, and Unpopular. Significant traits found only in the 6th grade: Cooperative, Tolerant, Friendly, Withdrawing and Unadaptable. The 5th grade has the only significant correlation on Non-aggressive, while the 4th grade gives the only significant correlation for Adaptable.

#### Second Situation Comparison of Manhattan and Wamego

A comparison of the two schools for the second situation is made in Table 7. Differences between Manhattan and Wamego on the results of the second situation show up in the groups which consider a trait to be significant. Thus while in Manhattan there are significant agreements between both the 4th and 6th grades, and the 5th and 6th grades, in Wamego there is agreement between

the 5th and 6th grades only. When significant correlations are examined as to whether they come from Manhattan or Wamego, the following situation arises: the only significant correlation on Sp. Leader is furnished by the 6th grade of Manhattan. The only significant correlations on Withdrawing and Unadaptable are supplied by the 6th grade of Wamego. The two significant correlations on Bashful are found in the 5th and 6th grade of Wamego. The two significant correlations on Friendly come from the 4th grade of Manhattan and the 6th grade of Wamego, and the two significant correlations on Tolerant come from the 4th grade of Manhattan and the 6th grade of Wamego. The three significant correlations on Submissive are contributed by the 4th and 6th grades of Manhattan, and the 5th grade of Wamego; the ones on Cooperative by the 4th grade of Manhattan and the two 6th grades. All significant correlations on Confident come from the Manhattan grades. The ones on Unpopular from the two 5th grades and the 6th grade of Wamego. Significant correlations on Non-aggressive were obtained in the two 5th grades and the 6th grade of Manhattan; those on Adaptable in the two 6th grades and the 4th grade of Wamego. On Popular all groups except the two 4th grades give significant correlations.

The above findings may be summarized as follows: There were 30 significant correlations. These occurred on the following traits: (Number of groups giving significant correlations shown in parentheses) Popular (4), Cooperative (3), Confident (3), Submissive (3), Unpopular (3), Sp. Leader (2), Bashful (2),

Tolerant (2), Friendly (2), Non-aggressive (2), Adaptable (2), Unadaptable (1). Here still is a certain amount of agreement but less than in the first situation, as to which traits are significant for leadership. Here, looking for definite disagreements between adjoining grades, defined as differences of 20 points or more, the following appears. There are no disagreements on Cooperative, Sp. Leader, Non-aggressive, Seeks Attention. Two definite disagreements between pairs of grades occur on Submissive, Tolerant, Friendly, and Withdrawing. All the other traits show one definite disagreement each. Here there is no definite relationship between the number of significant traits and the number of disagreements, unlike in the first situation.

Here, traits found in three or more groups with correlations of 0.40 or better are Popular, Cooperative, and Confident. If the lower limits are set at 0.38 Submissive also meets the requirements. These traits are the same as were found in three or more groups with high correlations in the first situation. Conversely, traits showing no significant correlations for any grade are Ascendant, Dominant, Follower, Intolerant, Aggressive, Seeks attention, and Does Not Seek Attention.

#### Results of Third Situation, Manhattan Sample

The results for the third situation are presented in Table 8. In the third situation in Manhattan the only grade trend occurs on Intolerant. There are five significant correlations each in the 4th and 6th grades and three in the 5th grade. All the groups

agree that the trait Popular is significant. The 4th and 6th agree on the significance of Submissive, Cooperative, and Confident. The 4th grade has the only significant correlation for Sp. Leader; the 6th grade the only one on Adaptable. The 5th grade has the only significant correlations on Aggressive and Non-aggressive.

#### Results of Third Situation, Wamego Sample

In the third situation in Wamego, the only correlations showing a grade trend occur on Unadaptable and Withdrawing, with Unadaptable showing its biggest jump from the 4th to 5th grade, and Withdrawing from the 5th to the 6th grade. There are no traits significant in all grades. There is only one significant correlation in the 4th grade, there are five in the 5th grade and six in the 6th grade. Popular is the only significant trait found in two groups, the 5th and 6th grade. Significant traits found only in the 6th grade include Confident, Friendly, Withdrawing, Unpopular, and Unadaptable. Significant traits found only in the 5th grade include: Submissive, Cooperative, Sp. Leader, and Follower. The 4th grade produces the only significant correlation on Adaptable.

#### Third Situation, Comparison of Manhattan and Wamego

A comparison of the two schools for the third situation is presented in Table 10. In this third situation we find significant agreements between the 4th and 6th grades in Manhattan, and between

the 5th and 6th grades in Wamego. The sources of the significant correlations are indicated below. The only significant correlation on Follower comes from the 5th grade in Wamego. The significant correlations on Friendly, Withdrawing, Unadaptable, and Unpopular all come from the 6th grade in Wamego, while the significant correlations on Aggressive and Non-aggressive both come from the 5th grade in Manhattan. The two significant correlations on Sp. Leader come from the two 5th grades. The 4th grade of Wamego and the 6th grade of Manhattan furnish the two significant correlations on Adaptable. On Submissive the three significant correlations occur in the 4th and 6th grades of Manhattan, and the 5th grade of Wamego. The same situation holds for Cooperative. On Confident the significant correlations come from the 4th grade of Manhattan and the two 6th grades. All groups except the 4th grade of Wamego give significant correlations on Popular.

This may be summarized by saying that out of 120 correlations there were 24 significant ones. The significant traits, with numbers of groups reporting the trait shown in parentheses, are as follows: Popular (5), Cooperative (3), Confident (3), Submissive (3), Adaptable (2), Sp. Leader (2), Follower (1), Friendly (1), Withdrawing (1), Aggressive (1), Non-aggressive (1), Unadaptable (1), Unpopular (1). Here still is noted some agreement on which traits are significant for leadership but less so than in the two previous situations. Here examination of adjoining grades for definite disagreements, i.e. differences of 20 or more correlation points between pairs of grades reveals the following: There are three definite disagreements each on



Submissive, Withdrawing, Aggressive, and Unadaptable. Two definite disagreements each on Cooperative, Sp. Leader, Intolerant, Adaptable, and Unpopular. There are no disagreements on Dominant, Confident, Bashful, Seeks Attention, Does Not Seek Attention. The remaining six traits show one disagreement each. Here again is noted a slight trend for the traits with the largest number of disagreements to be the same ones which gave the fewest number of significant correlations.

In conclusion, it is observed that traits showing correlations of 0.40 or better in three or more groups are: Popular and Submissive. If the lower limits are set at 0.38, Cooperative and Confident also meet the requirements. Thus, within a range of two correlation points, the same significant traits are found in all three situations. On the other hand for the third situation we find no significant correlations for any group on Ascendant, Dominant, Bashful, Tolerant, Intolerant, Unadaptable, Seeks Attention, and Does Not Seek Attention.

#### EVALUATION

What then does this study show? It shows that children in grades 4-6 are definitely able to identify personality traits that they want in their leaders. This is indicated by the fact that correlations of about the same magnitude i.e. 0.38 or better are obtained on Popular, Cooperative, Confident, and Submissive in all three situations. Even though there are some rather marked changes for some traits from one situation to the other, these



four traits remain among the ones which show correlations of  $0.38^1$  or better in three or more groups, in all the three situations. This indicates a fair degree of consistency in the identification of these particular traits. Another reason for the significance of these findings is that the total number of significant correlations decreases as one goes from situation to situation, while these particular ones retain their rankings on all of them. This would not be expected on purely a chance basis especially in view of the fact that the third situation, go-home-with-after-school, was not too meaningful to some of the children, as will be explained later. So much for the positive findings.

However, the question now arises as to why between two-thirds and four-fifths of the correlations were not significant. The first explanation that comes to mind is the ability or inability of children of these ages to project from one situation to another. Since the questionnaires were given to the children in their own classrooms the first hour in the afternoon, the first question, whom do you want to sit next to for class, was most meaningful to them because it referred to a situation they were already in. Even though the actual seating arrangement in the class did not represent the results of expressed choices in all cases, it did not require too much imagination to make a choice of partners, similar, if not equal, to the choices which would be made if selection were unrestricted.

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<sup>1</sup>/This is the minimum size correlation required to get significance on the 5 percent level.

In the case of the second situation, play-with-at-recess, different conditions existed. While in the case of the first situation presence in the classroom was a help in making selections, in the second, it may have been a hindrance, because the children had to make choices for a situation which was to take place in different surroundings at a future time. If the question had been presented just before time for recess or actually out on the playground, different results might have been obtained, because there would have been no need to project to a future time. This is somewhat substantiated by the drop in the number of significant correlations as one goes from situation to situation in the 4th grade, particularly in the Wamego school.

These factors are even more pronounced in the third situation, go-home-with-after-school, and, in addition some other factors enter in to make the situation less meaningful for the children. One of these was aptly stated by some of the children themselves: "Nobody lives my way". In other words physical factors, such as living in another part of town, prevented the situation from being carried out. Also parental objections to some of the children's associates, may prevent the children from realizing their choices. This discussion may be summarized by saying the situations, play-with-at-recess and go-home-with-after-school, particularly the latter, did not meet the criterion of Moreno and Jennings that the choices should be "put into operation to the optimal satis-

fraction of all subjects".<sup>2</sup> This condition could not be met because of the factors noted above.

So much for possible errors in the Sociometric Test. Turning now to the Personality Questionnaire, a certain amount of the element of projection is still found here for some of the statements describe behavior which would more likely be observed on the playground than in the classroom. This would be especially true of items like Aggressive which gave only one significant correlation in all three situations and Dominant which gave no significant correlation for any situation. This may be a partial explanation of the low correlations obtained, particularly in the 4th grades.

Another possible explanation of the low correlations may be language difficulties. This is especially true of such items as Tolerant, Intolerant, and Does Not Seek Attention. These items gave few if any significant correlations and were also the ones on which questions were most frequently asked. However, this does not explain why significant correlations should be obtained in the 4th grade on an item like Adaptable, while no significant correlations were obtained on the item Popular. The item Popular defined as "has many friends and is well liked" would appear to be an easier item to answer than Adaptable, defined as "can easily take up new activity when old one is broken up". Increase in grade does not seem to be much of a factor in the ability to understand items,

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<sup>2</sup>M. H. Jennings, "Leadership and Sociometric Choice," Sociometry, 10:35, February 1947

as shown by lack of a consistent grade trend for most of them. The only exception to this, and it is not very strong, is in the ability to identify "negative" traits, i.e. those which have words denoting absence or infrequency of behavior, e.g. seldom, rarely, few, etc. in their definition. For example, in the first situation five out of six groups knew who was Popular, while only three out of six knew who was Unpopular. Similarly, four out of six groups had some idea of who was Friendly, while only one group knew who was Withdrawing.

What then do the findings show about the instruments used for the study of leadership? They seem to indicate that the sociometric method can be effectively used if the situations are meaningful to the children and can be carried out. Even though it was thought at the beginning of this study that the situations employed were meaningful, this turned out not to be the case, especially on the situation, go-home-with-after-school, where difficulties were encountered. Questionnaires like the one used in this study can also be effectively used if they are refined, by means of item analysis, to see which items should be retained, which revised, and which discarded.

This brings up the question of how this study can be effectively followed up. Item analysis of the personality questionnaire has already been mentioned. Another possible follow-up study might be to investigate the effects of time of day and of previous on-going activity on answers to questions such as the ones appearing in the personality questionnaire used in this study. Such a study

might show if the answers of the children would change if they had a chance to observe at least some of the forms of behavior mentioned in the questionnaire just before taking it. Also, it might show if their answer might be different, if before taking the questionnaire, they were working on projects in small groups, from what they would be if the preceding time had been spent in reading class or similar activity.

When comparing this study with other studies which have used different methods to investigate the same phenomena, it is noted that two of the traits found significant in other studies are also among the ones showing significant correlations in three or more groups in all three situations. They are Cooperative and Confident. The other traits meeting the above criteria are missing from the list of traits mentioned most frequently by other investigators, Submissive being mentioned only once and Popular not at all. On the other hand, two of the traits mentioned often by other investigators, Friendly and Dominant, are not among those showing a large number of Significant correlations, Friendly giving seven significant correlations and Dominant none. (The above discussion is based on data shown in Table 1.) This study, therefore, substantiates some of the findings of other investigators while adding some of its own.

#### SUMMARY AND CONCLUSIONS

A Sociometric test consisting of three situations: sit-next-



to, play-with-at-recess, and go-home-with-after-school, and a personality questionnaire of twenty traits operationally defined was given to 95 subjects in the 4th, 5th, and 6th grades of Manhattan, and to 81 children in the same grades in Wamego. The subjects were asked to make three choices of partners for each of the three situations of the Sociometric test. On the personality questionnaire they were asked to write opposite each statement the name or names of persons they thought the statement described. The number of votes each subject got on each of the three situations of the sociometric test was then correlated with the number of mentions he received on each of the twenty traits of the personality questionnaire. The significance of the correlations was tested by Fisher's  $t$  test. Persons receiving the highest number of votes on each situation of the sociometric test were designated as leaders for that situation.

On the first sociometric test 41 out of 120 correlations proved significant. Traits on which significant correlations, i.e. with  $t$  values of 2.00 or better were reported and which were also found in three or more groups included Popular, Cooperative, Confident, Submissive, Friendly, Sp. Leader, Bashful, Adaptable, and Unpopular.

On the second sociometric test 30 out of 120 correlations were significant. Significant traits found in three or more groups were as follows: Popular, Cooperative, Confident, Submissive, and Unpopular. Here we have a decline, as compared to the first



situation, both in the total number of significant correlations and those found in three or more groups.

On the third sociometric test 24 out of 120 correlations were significant. Significant traits occurring in three or more groups include: Popular, Cooperative, Confident, and Submissive. This represents a further decline both in the total number of significant correlations and those found in three or more groups.

There is no distinct trend for the correlations to increase or decrease with increase in grade. There is a slight grade trend in the total number of significant correlations, and in the ability to identify "negative" traits, i.e. those which use words like rarely, seldom, few, etc. in the definition. In general we find more agreements between the 4th and 6th grades than between the 4th and 5th or the 5th and 6th grades.

The decrease in the total number of significant correlations as one goes from situation to situation seems to be due to the inability of the subjects, particularly in the 4th grades, to project from one situation to another. Also the third situation, go-home-with-after-school, seemed to be less meaningful to the children than the other two because it was furthest away in time, and the possibility of its being carried out to the satisfaction of all concerned was blocked by such factors as living in another part of town and parental objections. Inability to project from one situation to another may also have contributed to the inability to identify certain forms of behavior, since some of these would more often be found on the playground than in the classroom.

In spite of these difficulties, we still obtain significant correlations in three or more groups on Popular, Cooperative, Confident, and Submissive in all three situations. In contrast to this we find no significant correlations on Dominant, Seeks Attention and Does Not Seek Attention for any of the groups.

These findings indicate that children in grades 4-6 are definitely able to identify some of the traits they want in their leaders, at least such traits as Popular, Cooperative, Confident, and Submissive. They also show that these traits can be discovered by instruments such as the ones used in the present study, especially if they are further refined.

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## APPENDIX

## Sociometric Test

No printed form was used.

Subjects given blank pieces of paper with following instructions:

Write down on this sheet the names of three people in your class whom you would like to:

Sit next to for class

Play with at recess

Go home with after school

Subjects allowed to finish writing names for one situation before next one was presented.

# Personality Questionnaire

## Checklist of Traits (for students)

Instructions: Write opposite each statement the name or names of students (in your class) to whom it applies. You may write more than one name opposite each statement.

Ascendant - Often wants to go on with what he is doing when asked to stop.

Submissive - Stops doing what he is doing at once when asked.

Cooperative - Often helps others with tasks; can work with them.

Dominant - Tries to "run the whole show"; tries to be bossy.

Sp. Leader - Often has new ideas, followed by others.

Follower - Has few new ideas; usually follows or joins in ideas of others.

Confident - Eagerly joins in activities.

Reluctant - Does not easily join; watches games rather than taking an active part.

Tolerant - Often accepts suggestions of others.

Intolerant - Seldom accepts suggestions of others.

Friendly - Often talks to and plays with other boys and girls.

Withdrawn - Rarely talks to or plays with other boys and girls.

Aggressive - Often fights to get what he wants.

Non-aggressive - Does not fight; gets what he wants by talking.  
(persuasion)

Adaptable - Can easily take up new activity when old one is broken up.

Inadaptable - Cannot easily take up new activity.

Popular - Has many friends and is well liked.

Unpopular - Has few friends; is disliked.

Seeks attention - Tries to show off; tries to get sympathy of others.

Does not seek attention - Does not do these things.



## Formulas Used

## 1. Product-Moment Correlation

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{N}}{\sqrt{\frac{\sum X^2 - \frac{(\sum X)^2}{N}}{N}} \sqrt{\frac{\sum Y^2 - \frac{(\sum Y)^2}{N}}{N}}}$$

## 2. Fisher's t test

$$t = \frac{r}{\sqrt{\frac{1 - r^2}{n - 2}}}$$